

ABSTRACT

[0039] A rotor for a permanent magnet motor with a rotor yoke and a permanent magnet ring mounted on the rotor yoke, the magnet ring having a plurality of circumferentially spaced poles. One of the rotor yoke and the permanent magnet ring is an annular member including depressed portions along a peripheral edge located around a midpoint between each pole. The depressed portions are shaped so the motor produces a sinusoidal flux density. The other of the rotor yoke and the permanent magnet ring is an annular ring. In another aspect, the rotor has a rotor yoke and a permanent magnet ring mounted on the rotor yoke. The permanent magnet ring includes a plurality of circumferentially spaced poles. One of the rotor yoke and the permanent magnet ring includes a plurality of depressions along an outer peripheral edge shaped so the motor produces a sinusoidal flux density during operation. Each of the plurality of depressions is located around a junction defined by two poles. In either aspect, the rotor yoke can be skewed, and the magnet ring can be tapered.

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